

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**  
**and**  
**CENTERS FOR DISEASE CONTROL AND PREVENTION**

**convene the**

**ADVISORY COUNCIL FOR THE  
ELIMINATION OF TUBERCULOSIS MEETING**

***Atlanta, Georgia  
February 6-7, 2002***

**FINAL RECORD OF THE PROCEEDINGS**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES  
CENTERS FOR DISEASE CONTROL AND PREVENTION**

**ADVISORY COUNCIL FOR THE ELIMINATION OF TUBERCULOSIS  
*February 6-7, 2002  
Atlanta, Georgia***

**Final Minutes of the Meeting**

The Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) convened a meeting of the Advisory Council for the Elimination of Tuberculosis (ACET). The proceedings were held on February 6-7, 2002 at CDC's Corporate Square Facility, Building 8, in Atlanta, Georgia. The following individuals were present to contribute to the discussion.

**ACET Members**

Dr. Charles Nolan, Chair  
Dr. Stephanie Bailey  
Dr. David Cohn  
Dr. Masae Kawamura  
Dr. Charles Wallace

**ACET Ex Officiis and Liaisons**

Dr. Amy Bloom (USAID)  
Dr. Henry Blumberg (IDSA)  
Ms. Fran Dumelle (ALA)  
Ms. Sue Etkind (NTCA)  
Dr. Anne Fanning (IUATLD)  
Dr. Michael Johnson (HRSA)  
[via Envision]  
Dr. James Pearson (DCLS)  
Ms. Carol Pozsik (NTCA)  
Dr. Lee Reichman (NJ Medical School)  
Dr. Maria Rios (HRSA) [via Envision]  
Dr. Diana Schneider (DIHS)  
Dr. Christine Sizemore (NIH)  
Ms. Rachel Stricof (APIC)  
Dr. Michael Tapper (SHEA)  
Dr. Teresa Watkins-Bryant (HRSA)  
[via Envision]

**Designated Federal Official**

Dr. Ronald Valdiserri, Executive  
Secretary

**CDC Representatives**

Dr. Kenneth Castro, DTBE Director  
Dr. Gregory Andrews  
Dr. Jose Becerra  
Ms. Naomi Bock  
Ms. Lorna Bozeman  
Dr. James Buehler  
Dr. George Counts  
Dr. Jack Crawford  
Ms. Cynthia Crew  
Mr. Fred Cirillo  
Mr. David Crowder  
Ms. Melody Davis  
Ms. Teresa Durden  
Ms. Thena Durham  
Mr. Alstead Forbes  
Ms. Paulette Ford-Knights  
Mr. Darryl Hardge  
Dr. Michael Iademarco  
Dr. Kashef Ijaz  
Dr. Bill Jenkins  
Dr. John Jereb  
Dr. Awal Khan  
Dr. Karl Kronmann  
Dr. Mark Lobato  
Dr. Imani Ma=at  
Dr. Bereneice Madison  
Dr. Gerald Mazurek

Dr. Peter McElroy  
Dr. Scott McNabb  
Dr. Thomas Navin  
Dr. Richard O'Brien  
Ms. Kathryn O'Toole  
Mr. Fernando Pagan  
Mr. Paul Poppe  
Mr. Joe Posid  
Mr. Michael Qualls  
Ms. Noreen Qualls  
Dr. John Ridderhof  
Dr. René Ridzon  
Ms. Renee Ross  
Ms. Margie Scott-Cseh  
Mr. John Seggerson  
Dr. Thomas Shinnick  
Dr. Zachary Taylor  
Ms. Rita Varga

Dr. Andrew Vernon  
Dr. Gregory Wagner (NIOSH)  
Dr. Wanda Walton  
Ms. Misty Worley  
Dr. Elsa Villarino

Guests

Ms. Alice Alexander (TB Monitor)  
Mr. Richard Fluck (F&M College)  
Mr. Lex Gibson (Virginia DOH)  
Dr. Philip Hopewell (ATS)  
Dr. Abraham Miranda (DOI)  
Dr. Eileen Napolitano (NJ Medical School)  
Dr. Walter Page (NTCA)  
Dr. Stephen Puentes (LA County DOH)

***Opening Session.*** Dr. Charles Nolan, the ACET Chair, called the meeting to order at 8:50 a.m on February 6, 2002. He welcomed the attendees to the proceedings and opened the floor for introductions. Dr. Ronald Valdiserri, the ACET Executive Secretary, made some administrative announcements. First, attendees should be mindful of the fact that all comments are a matter of public record since meetings are open to the public. Second, members should excuse themselves from discussions that present a conflict of interest. Third, CDC expects members whose terms have expired to continue to serve until their replacements have officially been appointed. Dr. Kawamura will be proposed as the new ACET Chair.

***Update by the National Center for HIV, STD and TB Prevention (NCHSTP).*** Dr. Valdiserri's status report covered the following areas. First, directors' positions for the Division of HIV/AIDS-Intervention, Research and Support Branch and the Division of STD Prevention are still vacant. Second, the President signed CDC's appropriations bill on January 10, 2002. The total increase of \$91.4 million for NCHSTP programs breaks down to \$39 million for international HIV/AIDS, \$38 million for domestic HIV/AIDS, \$9 million for STD prevention and control, and \$5 million for TB control. CDC's non-bioterrorism appropriation of \$4.3 billion represents an increase of \$430 million from FY=01. The majority of the \$2.1 billion increase for bioterrorism preparedness will be allocated to extramural programs, including \$865 million to state and local health departments and academic institutions to strengthen capacity; \$593 million for the National Pharmaceutical Stockpile; and \$512 million for smallpox vaccine purchase.

***Update by the Director of the Division of TB Elimination (DTBE).*** Dr. Kenneth Castro's status report covered the following areas. First, 22 jurisdictions successfully competed to be included in the TB Epidemiology Studies Consortium (TBESC), but eight of the sites were not funded. DTBE submitted a proposal to allocate a portion of its FY=02 funding to these areas. At a meeting in December 2001, initial steps were taken to develop the TBESC comprehensive research agenda and operational structure. Under three task orders, TBESC will prospectively evaluate immunogenetic and immunologic markers for susceptibility to *M. tuberculosis* infection and progression from latent to active TB; conduct activities to result in zero tolerance for pediatric TB; and design models to incorporate voluntary HIV counseling and testing into TB contact investigations.

Second, DTBE's Outbreak Evaluation Unit has been participating in several TB investigations throughout the country since January 1, 2002: the death of a graduate student in Alabama; 17 cases in an Oklahoma community, jail and high school; four cases and two suspects in Georgia homeless shelters; and one case of multi-drug resistant (MDR) TB in a foreign-born person in Nevada. Third, a TB Information Management System summit was held in November 2001 to strengthen collaboration with the National TB Controllers Association (NTCA). The attendees evaluated modules and reviewed several data management needs, such as standardized definitions, data import capacity, issues for low incidence areas, and compliance with CDC's National Electronic Disease Surveillance System (NEDSS).

Fourth, progress continues to be made in the TB Trials Consortium (TBTC). Over 400 persons have been enrolled in Study 26 to compare the once-weekly 12-dose regimen of isoniazid (INH)/rifapentine with the nine-month INH regimen. However, additional support will be needed to reach the target of 8,000 study participants. Study 27 is being designed as a Phase II trial to examine daily or intermittent use of moxifloxacin during the initial treatment phase of TB. Sputum conversion at two months, ability to tolerate the drug and toxicity will be analyzed as well. Fifth, several activities will be implemented to enhance communication and training. DTBE will convene grand rounds, publish articles in the *Morbidity and Mortality Weekly Report (MMWR)* and participate in other events during World TB Day on March 24, 2002. Regional and nurse training sessions on MDR-TB have been conducted in Latvia and Estonia.

Representatives from various target audiences will participate in focus groups to provide input on the American Thoracic Society (ATS)/CDC/Infectious Disease Society of America (IDSA) TB treatment guidelines. These discussions are being held to ensure recommendations are clearly understood before the draft document is finalized and distributed. DTBE has been redesigning its Internet materials to comply with American Disabilities Act 508 and ensure documents are accessible to visually impaired persons. Sixth, DTBE continues to play a key role in global TB

initiatives, such as attending the upcoming TB/HIV meeting in Kenya; securing approval for the secondment to establish an AIDS/TB/malaria global fund; making efforts to provide TB support to India; improving the exchange of information for binational TB control between the United States and Mexico; and providing technical assistance to Russia, Baltics, Peru and Global AIDS Program countries.

ACET encouraged DTBE to clarify to the public that TB has not been eliminated. The media could be used to nationally publicize the recent TB death and cases, while CDC's Office of Communications could hold training workshops at NTCA meetings. Successes, failures and lessons learned from previous interactions between TB controllers and the media could be highlighted. DTBE could also establish a more intensive process to screen and test foreign-born students for TB prior to their enrollment in U.S. academic institutions.

*Update by the Immigration and Naturalization Service (INS) Workgroup.* Dr. Masae Kawamura highlighted changes in the latest draft on the treatment of persons with active TB in INS custody. The document is refined to three major goals: define the problem and consequences of incomplete TB treatment among deported INS detainees; clarify ACET's recommendations on this issue; and serve as a starting point for the HHS Secretary to take action. The target audience is defined as policymakers; the language and content are edited to focus on this group. The public health perspective is included by describing the complexities of TB treatment. NTCA's prioritization of TB is outlined in the context of the Institute of Medicine (IOM) report. CURE TB data on the number of patients who return to the United States and information on successful MDR treatment in the United States are deleted.

The document primarily focuses on conflicting mandates between public health and custody issues of INS detainees as well as the need to safeguard public health at both international and domestic levels by ensuring completion of therapy. The secondary focus of the document is the need to improve coordination, collaboration and reporting mechanisms. The recommendations are smaller in number, simplified and more generic. HHS and the Department of Justice (DOJ) are asked to form an interagency policy group. In addition to these changes, other issues must be resolved before the document is submitted for publication.

The current review by Mexican TB Control authorities may result in additional changes. The document must be submitted with less than 1500 words; an expanded and more detailed version may be needed. The final version will be forwarded to the HHS Secretary. The need for collaboration between CDC and the Division of Immigration Health Services (DIHS) must be addressed. This partnership may result in the development of a surveillance system that would identify the number of detainees with active TB and latent TB infection (LTBI); monitor transfers,

deportations or persons repeatedly held in custody; and determine rates of treatment completion and incidence of drug resistance.

Dr. Valdiserri requested that the discussion focus on two separate issues: specific recommendations to be issued as an official ACET statement and the *MMWR* or another venue to publish the document. He explained that the second issue needs to be addressed because recommendations in the document are directed to non-HHS agencies. Dr. Castro added that support and endorsement will need to be obtained from partner agencies listed in the document before the statement can be published in the *MMWR*. Prior to the formal clearance process, the CDC Office of the Director will ask DTBE to verify whether the document has been circulated to these agencies for review and comment. Ms. Thena Durham, the NCHSTP Acting Deputy Director for Policy, advised ACET to provide the HHS Secretary with extremely specific language. For example, the recommendations should be clearly delineated as policy or legislative issues.

ACET discussed the recommendations that should be serve as its official statement since a meeting will be held with the HHS Deputy Secretary in the near future. Agreement was reached to revisit the document at a future meeting to bring closure to publication and other outstanding issues: an expanded version; discussion topics with the HHS Deputy Secretary versus items to include in the publication; the large percentage of INS detainees from Mexico and other international issues; security concerns; and policy versus legislative matters. ACET also raised the possibility of circulating the document to the existing HHS/ DOJ Workgroup since CDC and DIHS representatives serve as members. Revisions to the recommendations were noted; the Chair entertained a motion to use the following language as ACET=s official statement.

**To reduce the risk of exporting or re-importing persons with active TB identified while in INS custody, the Advisory Council on the Elimination of Tuberculosis recommends to the Departments of Health and Human Services and Justice that they form an interagency policy group involving other key organizations and entities to work toward a consensus on the following measures.**

1. Explore the feasibility of treating INS detainees in the United States until TB is cured in the least restrictive setting. Consideration should be given to changing or amending current policies or federal laws for detainees who are being evaluated or receiving treatment for active TB to allow deportation only after the responsible state TB controller (or their designate) reviews and approves the treatment plan. For cases of multi-drug resistant TB, the availability of drugs needed to complete treatment in the country of origin should be assured prior to deportation.

2. Work with professional correctional associations to improve adherence to local public health laws and CDC guidelines for TB screening and case notification, and to enhance collaboration among the INS SPCs, contract facilities, and TB programs. Protocols should require the sharing of medical information and describe mechanisms for the transfer of care when a patient is deported or released back to the community.
3. Enact policies requiring reporting of cases and suspects in INS custody prior to the transfer or deportation of an INS detainee with TB to the Division of Immigration Health Services personnel, State and local TB Control programs of the jurisdictions where the sending and receiving facilities to improve collaboration and coordination of care.
4. Expand the medical hold authority of the Division of Immigration Health Services= medical officers to permit notification of receiving health care providers or a national referral program (e.g., CURE-TB or TBNet), transfer of medical records, and provision of sufficient TB medications to ensure treatment until the patient=s care is continued.

The motion was so moved and properly seconded by voting members. There being no further discussion, the resolution unanimously passed.

***Update on Revision to TB Infection Control Guidelines.*** Dr. Reneé Ridzon reported that DTBE held a meeting in January 2002 with outside experts to review the draft document. The attendees discussed several key changes to the guidelines. For TB infection control programs, strong emphasis is being placed on the need for administrative, environmental and personal respiratory controls when applicable. An *a priori* decision of treatment of known or suspected TB is being proposed. In all settings, responsibility should be assigned, an infection control plan should be written and patients with known or suspected TB should be promptly recognized. In settings where care is not given, a triage plan to transfer patients should be established and risk assessment should be conducted.

For risk assessment, development of an evaluation tool, determination of risk classification and identification of high-risk areas are being recommended. Risk classifications have been redefined as low risk for no annual tuberculin skin testing (TST), medium risk for annual TST, and high risk for TST every three months. DTBE is revising its previous estimates of the number of beds and patients that will define a facility as low, medium or high risk. Emergency, autopsy and operating rooms, laboratories, TB clinics, correctional facilities, hospices and other outpatient settings are now addressed in the guidelines. For frequency of sputum collection for TB suspects, three negative smears for AFB are still required to move a patient from respiratory isolation. Sputum smears should be at least

eight hours apart and one should be collected in the early morning. DTBE hopes this recommendation will decrease the collection time from three to two days.

The guidelines recommend that isolation for AFB smear-positive patients be discontinued when the likelihood of infectious TB is negligible and another diagnosis is not assigned or three negative sputums were obtained on three consecutive days. For health care workers (HCWs), a strategy has been proposed to conduct TST in hospital settings by analyzing both the facility and individual. For environmental issues, the guidelines now include a much broader and more detailed explanation. The number of air changes per hour, differential air flow rates and leakage, monitoring devices, the amount of water for negative pressure rooms, and the modified clearance rate table for ongoing production are discussed in terms of airborne infection isolation rooms (AIIRs).

Dr. Gregory Wagner announced that fit testing recommendations in the guidelines were a major topic of discussion during the January 2002 meeting with experts. The attendees did not reach consensus on the frequency of fit testing, but the benefit of incorporating fit testing in initial training sessions was acknowledged. Before describing recent developments in fit testing research, Dr. Wagner outlined the history and purpose of respirators. While surgical masks protect the environment from the wearer, respirators protect the wearer from the environment. The level of protection respirators provide to wearers is defined by an assigned protection factor (APF). The respirator must match with the wearer and the level of protection 95% of wearers would receive from external environmental hazards are used to define an APF.

In industrial settings, respirators are typically selected by identifying the type of hazard, determining the concentration and calculating the hazard ratio (HR). The respirator class is then chosen by ensuring that the APF is greater than the HR. However, the selection process is more difficult with biological aerosols due to the variability of these concentrations in the environment. Fit testing was historically used to identify the 5% of the population that would not receive the expected level of protection, but the current purpose has changed. Accommodation of the face piece is verified with individual facial characteristics to determine whether the wearer can properly don the respirator during a training program. Both public and private agencies conduct activities and have responsibility for respirators.

The Occupational Safety and Health Administration (OSHA) regulates, inspects and enforces respirator use and standards. The National Institute for Occupational Safety and Health (NIOSH) conducts respirator research, establishes standards for respirator functions and provides certification to manufacturers. The American National Standards Institute (ANSI) convenes expert panels to establish voluntary consensus standards. OSHA, NIOSH and ANSI agree that annual fit testing is necessary in general industry to detect poor fit, train wearers and improve the selection of respirators. Recent NIOSH research projects have focused on the adequacy and design of fit tests. Laboratory experiments were conducted to compare quantitative fit factors of six methods to an exposure measure.

Of those, only the Generated Aerosol and PortaCount Plus were validated with a high correlation to exposure reduction.

NIOSH is also conducting an investigation to determine the effectiveness of fit test methods for N95 filtering face piece respirators. These data will provide insight into the performance of some N95 respirators with and without fit testing. The study design included 18 N95 filtering face piece respirators as well as 25 adult males and females of various ages, heights and weights. However, NIOSH realizes that the study population does not represent the U.S. workforce in general or HCWs in particular. Three OSHA recognized tests and a NIOSH modified test were incorporated into the study methodology as well. Fit results were compared with the actual level of protection and other reference results. The ANSI Z88.10 standard was used to define accuracy goals for the study. Comparison of the fit test methods showed the following results.

The three OSHA recognized tests were 9%-11% likely to accept the N95 respirator as providing protection; the NIOSH modified fit test was 4% likely. All four tests were 51%-75% likely to reject the N95 respirator as providing protection. Despite these large variations, fit testing was found to improve protection overall. Well-designed respirators supplemented by fit tests were found to increase the level of protection. Fit testing alone was found to be insufficient to ensure expected protection in the workplace because all persons will not achieve a good fit. NIOSH is currently conducting several research projects to develop more accurate fit tests; assess the performance of surgical masks; design, test and don new procedures; and establish study panels to more accurately represent worker populations in specific occupations and industries. In the future, NIOSH will increase its use of virtual fit testing, scanned faces databases, scan respirators, modeling and other state-of-the-art technologies.

In general, **ACET** applauded DTBE and NIOSH for further clarifying and applying sound science in revising the TB infection control guidelines. In particular, several suggestions were made. The overall document should primarily focus on early identification, adequate treatment and risk reduction of infectious TB, while the respiratory section should supplement administrative and environmental controls. Stronger efforts should be made to inform health care facilities about the best fitting masks since the annual fit testing recommendation in the revised guidelines is not supported by solid data. Moreover, TB is now being controlled in a number of occupational settings without annual fit testing.

The revised document should more clearly describe laboratories and other settings where respiratory protection would be appropriate and expected. The current guidelines allow HCWs to have a personal choice. CDC should obtain guidance on this issue from the Association of Public Health Laboratories (APHL). Certified sputum collection should be discussed in the document since the quality of this specimen from a symptomatic TB patient is equal to a self-expectorated or induced smear. Certified sputum collection also eliminates the need for a costly bronchoscopy procedure or sputum induction. An information resource list should be attached to the document to provide additional guidance

to short-term nursing facilities, dialysis and transplant units or other small non-hospital settings. Caution should be taken in revising the risk classification to a significant degree in the absence of strong supporting data. DTBE confirmed that the document will be presented to ACET before being published in the *Federal Register*.

**Update on TST and Methods to Diagnose LTBI.** Dr. Elsa Villarino presented data that showed a significant difference in specificity among Aplisol, Tubersol and purified protein derivative-S (PPD-S). However, a comparison between Aplisol and Tubersol only showed no statistical significance from PPD-S. In an analysis in which persons who tested positive with a reaction of >10 mm to PPD-S were excluded, specificity between Aplisol and Tubersol was also not considerable. DTBE has taken steps to collect more substantial data since the majority of published studies reporting problems with Aplisol are outdated. An article was drafted in October 2001 for future publication in the *MMWR*; three key recommendations are noted. First, the appropriate institution should be notified if a pharmacy, purchasing department or another entity decides to switch products.

Second, a systematic assessment should be completed to exclude the possibility of ongoing transmission if a cluster of false-positive reactions is seen after a switch is made. Third, the other product should be used to retest if ongoing transmission is not possible. Several issues are still outstanding before the draft article can be finalized. *Guidelines for the Diagnosis of TB Infection* is a 1984 monograph developed by an expert panel. The consensus paper is currently being updated and DTBE wants to ensure that its *MMWR* article is consistent. CDC recently obtained copies of MEDWATCH reports on Aplisol and Tubersol received by the Food and Drug Administration (FDA) since January 1998. DTBE has initiated an investigation of these data. In November 2001, the FDA approved the QuantiFeron7-TB (QFT) test as an aid in the diagnosis of TB infection. @

The test is an *in vitro* whole-blood assay of cell-mediated immunity to *M. tuberculosis* and offers several advantages: single patient visit; assessment of responses to both *M. tuberculosis* and non-TB microbacteria; no problems with boosting subsequent to TST or QFT; possible provision of results in 24 hours; less subjective interpretation; and less likelihood of being positive after BCG immunization. However, the disadvantages associated with QFT include the necessity of processing blood within 12 hours, lack of experience predicting TB risk and minimal staff with appropriate technical training. To provide guidance to the public, DTBE is proposing to publish a QFT update in the *MMWR*. For low-risk populations, the article will recommend a stringent cutoff of  $\geq 0.3$  to use the test; suggest follow-up with TST for all positive QFT results before diagnosing LTBI; and provide examples of settings to use the test, *i.e.*, pre-employment screening, military recruiting and areas in hospitals where staff are unlikely to be exposed to *M. tuberculosis*.

For high-risk populations, the article will recommend a less stringent cutoff of  $\geq 0.15$  to use the test; suggest follow-up with TST for all positive QFT results before diagnosing LTBI; and provide examples of settings to use the test, *i.e.*, HIV-infected persons, homeless populations, and foreign-born persons in the United States less than five years. For HCWs

and other low-risk populations that need annual screening, the article will recommend a stringent cutoff of  $\geq 0.3$  to use the test and suggest follow-up with TST for all positive QFT results before diagnosing LTBI. The *MMWR* update will also explain that QFT should not be used to differentiate between infected and non-infected TB suspects, evaluate TB contacts, assess persons with abnormal chest x-rays, and diagnose *M. avium* infection.

DTBE is conducting or will be initiating several activities to improve methods currently used to diagnose LTBI. Both domestic and international studies are being implemented to better assess the role of QFT in diagnosing LTBI in uninfected populations, untreated TB suspects, infants and children exposed to active TB, BCG vaccinated persons and immigrants. *M. tuberculosis* prevalence studies using discarded blood are being planned as well. **ACET** saw the proposed *MMWR* QFT update as an excellent opportunity to strengthen the current database on commercial products and inform the public about appropriate use of the test. The members agreed to provide DTBE with input on the article, but saw a need to first review animal and human studies on QFT.

***Update on Liver Injuries Associated with Rifampin/Pyrazinamide (RZ) for LTBI.*** Dr. Peter McElroy highlighted major activities DTBE has conducted in response to RZ issues. First, two articles were published in the *MMWR* describing RZ cases and outlining revisions to the ATS/CDC recommendations for LTBI treatment. Second, rates of liver injury associated with RZ are being estimated. Third, the prevalence of RZ use nationwide is being determined by continued surveillance of adverse events and case investigations after reports are received. Fourth, risk factors for liver injury in persons who receive RZ are being identified. To undertake these activities, DTBE first developed a case definition of liver injury as leading to Ahospital admission or death of a patient receiving RZ for LTBI. @

As of February 6, 2002, 36 cases from 18 TB control jurisdictions have been reported to CDC. Of those, 26 have been investigated by DTBE and seven were fatalities. The demographics of the 36 cases are a median age of 43 years, 61% male, 44% Hispanic, 43% with a positive hepatitis serology, 0% HIV-positive of ten cases tested, 89% on a daily RZ regimen, and 36% on directly observed therapy (DOT). DTBE will investigate the remaining ten case reports and will also conduct a retrospective multiple cohort study to determine RZ incidence and risk factors. However, DTBE realizes that several issues must first be addressed: whether all cases of liver injury associated with RZ were reported; the number of persons who received RZ for LTBI treatment; the most frequent setting in which RZ was used; and factors associated with liver injury.

Data are being collected in two phases for the study by identifying cohorts treated with RZ throughout the nation and characterizing each cohort. Phase I was initiated in December 2001 and is nearly complete. A survey was distributed to determine whether RZ was used between January 2000 and December 2001. To date, responses have been received from 46 of 50 TB controllers and all ten big cities. Preliminary data show that 34 of 46 states reported RZ use during the target time period, 80 cohorts were identified, and the median cohort size was 27 patients. Of the ten big cities, seven reported RZ use during the target

time period, nine cohorts were identified and the combined cohort size is at least 600 patients. Of the 46 surveys received from states to date, RZ was used during the target time period by 29 city or county TB programs, 17 city or county jails, 13 state prisons and in 11 other settings.

Of the ten surveys received from big cities, RZ was used during the target time period by seven city or county TB programs, three city or county jails and in 11 other settings. DTBE expects to initiate Phase II of the study within the next month. The detailed questionnaire that will be sent to each RZ provider identified in Phase I will request demographics of the cases and the number patients who were treated with RZ, completed RZ or admitted to a hospital. The survey will also ask if the program made modifications in response to the *MMWR* articles and request information on current use of RZ. The completed surveys will allow DTBE to obtain valid numerator and denominator data; estimate the incidence of liver injury associated with RZ exposure; describe cohorts in an aggregate manner; and examine associations between cohort characteristics and liver injury following RZ exposure.

**ACET** was extremely pleased about DTBE's efforts to collect additional numerator and denominator data on RZ use. A suggestion was made to add questions in the Phase II survey about the quality of monitoring patients. To avoid the complexities of conducting a prospective study that would require approval by an Institutional Review Board, ACET raised the possibility of DTBE issuing an alert to TB controllers. The notice could describe data that should be collected if the RZ regimen will be administered to patients.

***Racial and Ethnic Health Disparities.*** Disproportionate Impact of Syphilis on U.S. Minority Populations. Dr. George Counts reported that primary and secondary (P&S) syphilis rates were relatively equal among blacks and whites in the early 1980s, but the ratio significantly increased in the late 1980s and early 1990s. The exchange of sex for crack cocaine during this time was considered to be the major contributor of the disparity. Nevertheless, the elimination of syphilis in the United States was considered to be feasible due to a steady decrease in cases during the 1990s, easy diagnosis and treatment of the disease, and geographic localization. Since less than 1% of U.S. counties accounted for 50% of reported cases, a National Syphilis Elimination Plan was developed.

Strengthening community involvement and establishing partnerships are key strategies of the initiative since these components are necessary to sustain elimination. However, CDC realizes that several barriers must continually be addressed to form a true partnership with communities, such as mistrust, previous government experiences, lack of accessibility or availability to residents and differences in communication. To measure progress in the national plan, CDC uses 1997 as the baseline year since the initiative was first funded in 1996. From 1997-2000, P&S cases decreased 30%, congenital cases decreased 51%, the number of counties responsible for 50% of cases decreased 29% and the black/white rate ratio decreased 47%.

The 5,979 P&S cases reported in 2000 marks the first time in U.S. history the number of cases has been below 6,000. However, P&S rates have started to increase among Hispanics and whites due to recent syphilis outbreaks among men who have sex with men. CDC provides syphilis elimination funding to 30 counties with the highest number of cases. Of those, three counties were awarded additional dollars to serve as demonstration sites for the plan and reported a 20%-27% decrease in syphilis cases from 1999-2000. The supplemental funding proved to be extremely successful when compared to the 9.6% decline in national cases during the same time period.

Disparity Issues for African Americans. Dr. Imani Ma=at described the Racial and Ethnic Approaches to Community Health (REACH) 2010 demonstration project. The \$40 million activity is a component of the HHS initiative to eliminate health disparities among racial/ethnic populations by 2010 in six priority areas: infant mortality, breast and cervical cancer, cardiovascular disease, diabetes, HIV/AIDS and child/adult immunizations. After the five-year demonstration period is completed, CDC hopes to expand REACH by adding TB, syphilis and other priority areas. Both traditional and non-traditional partners are engaged in the initiative, including health departments, community-based organizations (CBOs), community health centers, police and fire departments, schools and faith-based institutions.

The first two years of REACH allowed 31 grantees to plan and obtain approval for projects by the Office of Management and Budget. The implementation phase is currently underway and a three-tier evaluation component is scheduled for the future. Community coalitions will be assessed in the areas of capacity building, agent and system changes, behavior modification and measurable outcomes. To build infrastructure and sustain capacity at the local level, experienced CBOs serve as mentors to new community coalitions. CDC also holds workshops for grantees three times per year. Another unique feature of REACH is the large funding amount of \$1 million per year for each grantee.

Dr. Bill Jenkins acknowledged that data and current knowledge about minority health disparities are lacking. Innovative strategies to address trust, specific cultural needs, language barriers, alienation in the United States and other issues that are unique to communities of color have still not been developed. Infant mortality, TB and other health issues serve as examples. Although TB rates decreased for all ethnic groups from 1989-1999, rate ratios are still high when compared to whites, *i.e.*, 10-15 times higher among Asian/Pacific Islanders, seven times higher among African Americans, and five times higher among Native Americans.

Needs Assessment of TB Control in the Southeastern United States. Mr. Lex Gibson, of the Virginia Department of Health, outlined the background of a draft strategic plan that is being developed. A regional workshop was held in October 2001 to address the Comprehensive TB Elimination Act of 2001, determine needs of southeastern states, develop action steps and identify measurable goals. These activities were viewed as critical because southeastern states have traditionally functioned as separate entities with no shared efforts, funding, resources or communication. However, the regional needs

assessment and workshop allowed southeastern states to have closer collaboration and ongoing discussion about shared projects. Steering, technical and foreign-born committees were established and a list server was developed.

The Southeast represents 23% of the U.S. population, but 26% of TB morbidity. In 2000, the TB case rate was 5.8/100,000 at the national level and 6.6/100,000 in the Southeast. By race/ethnicity, the Southeast contributed to 43% of all black cases and 14.5% of all foreign-born cases reported in the United States in 2000. In the Southeast region in 2000, 52% of cases were black and 25% were foreign-born. Florida, Georgia, Louisiana and South Carolina had four of the top ten TB rates in 2000, but the District of Columbia was included as a southeastern state because its 2000 TB rate was 14.9/100,000. These alarming data prompted TB controllers in southeastern states to cite an extensive list of needs during the regional workshop.

The items were grouped into 11 broad categories, including tools to address TB in foreign-born and U.S.-born special populations; legal and policy issues; patient care and case management; training and education; communication and information technology; and personnel. The next steps in the process are to complete the laboratory and research sections of the draft strategic plan; circulate the document for review and comment to all southeastern TB controllers and key staff members; develop a distribution strategy; and routinely update the plan. The document is expected to be finalized in six months; ACET was asked to serve as one of the independent reviewers of the strategic plan.

**ACET** made several recommendations to further address the issue of TB risk among African Americans. The Public Health Foundation is currently compiling a monograph of various programmatic abstracts that will describe community-based TB prevention projects. The organization has expressed an interest in presenting these data to ACET. Consideration should be given to inviting representatives of affected communities to serve as ACET liaison or *ex officio* members. TB is not currently a REACH priority area, but ACET can still make efforts to form alliances with existing projects. For example, the Promotora Community Coalition in Texas and Cambodian Community Health 2010 in Massachusetts serve foreign-born populations with high rates of TB. These organizations may be able to assist ACET in developing effective community-level interventions.

To strengthen the draft strategic plan on TB in the Southeast, interventions targeted to blacks should be included due to the large proportion of this population impacted by TB. Efforts should be made to ensure that TB program staff reflect at-risk populations, particularly blacks and foreign-born persons. The critical role of outreach workers as community leaders and professionals should be emphasized. Outreach workers should be fully integrated into southeastern health care teams and supported by senior administrators. Atlanta, Memphis, Nashville and other metropolitan cities in the Southeast should be incorporated into the strategic plan. Urban areas typically have the largest minority population and most significant TB burden in a state.

CDC should consider developing a Southeast-specific model center. An *MMWR* article should be developed to publicize ethnic/racial health disparities and unique infrastructure issues in the Southeast. If a meeting is convened to specifically address disparities in TB risks among U.S.-born blacks, several stakeholders should be engaged in the process: Black Caucus; National Medical Association; health arm of the National Association for the Advancement of Colored People; Urban League; Office of Minority Health; Charles Drew, Meharry Medical College, Morehouse School of Medicine and other black medical institutions; Health Resources and Services Administration; U.S. Department of Housing and Urban Development; Bureau of Prisons; and Substance Abuse and Mental Health Services Administration. ACET agreed to table this decision until several outstanding issues are clarified.

First, the meeting goals, focus, format and end-products need to be defined. For example, a funding proposal to specifically address TB in the Southeast could be one outcome of the meeting. This activity could be designed to provide concrete guidance and direction for health departments and communities to share perspectives in achieving TB elimination goals. Second, consensus needs to be reached on whether the activity will be limited to the Southeast or if Illinois and other states with a similar TB burden should be included. Third, a mechanism needs to be developed for ACET to parallel its efforts with those of the southeastern TB controllers= strategic plan. A suggestion was made for the TB in Southeastern States Workgroup to assist DTBE in addressing these issues during the planning process.

The attendees applauded the achievements of Mr. John Seggerson who retired from DTBE in January 2002. His valuable contributions to both CDC and ACET were acknowledged as well. There being no further discussion, Dr. Nolan recessed the ACET meeting at 5:06 p.m. on February 6, 2002.

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***Update on TB Laboratory Capacity.*** Dr. Nolan reconvened the ACET meeting at 8:52 a.m. on February 7, 2002 and yielded the floor to the first presenter. Dr. Thomas Shinnick acknowledged several challenges that must be addressed to improve TB laboratory capacity. From the perspective of public health programs and physicians, timely and reliable results must be available; solid and clear communication must be maintained; tracking and confidentiality issues must be resolved; strain typing data must be provided; budget and resource limitations must be reconciled; and evolving needs for laboratory support must be met, *i.e.*, changes in case distribution, impact of outbreaks or surge capacity.

From the perspective of laboratories, proficiency must be maintained as the number of specimens declines. Several components will be needed to overcome this challenge, including a highly-trained workforce, a Biosafety Level 3 (BSL3) facility, capacity to meet increasing demands for faster results, new molecular tests or other data, and adequate

budget and resources. Several approaches can be taken to provide reliable laboratory services: holding frequent training sessions, participating in proficiency testing programs, contracting with high-volume laboratories, allowing reference or front-line laboratories to complete specific tasks, and partnering with other facilities to consolidate or regionalize services.

Each of these approaches are feasible with adequate resources and solid political will, but several data gaps must be filled before the strategies can be applied. The TB laboratory provider, specific service needs and clients must be identified for each geographic location.

Site-specific barriers to obtaining timely laboratory support must be resolved. A cost-effective and efficient process must be established to impact the provision of TB laboratory services. To address these issues, the IOM report recommended that CDC consider regionalization of laboratory services; level of service concepts for TB laboratory support to programs and clinicians were emphasized as well. CDC partnered with APHL to respond to the IOM recommendations since this organization plays a key role in TB laboratory activities and policies.

In January 2001, CDC and APHL met to discuss a process to combine efforts and redefine goals for providing laboratory services. Agreement was reached to establish an expert workgroup that would clarify the problem, develop a charge for the TB laboratory task force, and compile a list of key questions to be addressed. These items include constituents= needs, current obstacles, potential knowledge gaps and innovative approaches. The eight-to ten-member expert workgroup will represent diverse groups: CDC, APHL, NTCA, ATS, TB control programs, physicians, as well as public health, hospital, academic and commercial laboratories from low-incidence, high-incidence, rural and urban areas. ACET and other TB advisory bodies will be asked to provide input on establishing the workgroup.

After the task force makes recommendations to address the future of TB laboratory services, the statement will be distributed for review and feedback to a variety of constituents, including ACET, NTCA and public health laboratories (PHLs). The 15- to 20-member task force will represent the same groups as the expert workgroup and will modify its recommendations based on input from constituents. CDC and APHL are making efforts to conduct activities under the following time-line: convene the first workgroup meeting in late spring 2002, hold the first task force meeting in late summer 2002, and present draft recommendations to ACET, PHLs and NTCA in October-November 2002.

Dr. John Ridderhof described current practices and challenges of TB laboratories. Of the 1,938 U.S. laboratories enrolled in proficiency testing, 1,621 are hospital laboratories. For TB testing, recommended methods include fluorochrome stain for smear microscopy, nucleic acid amplification (NAA) for *M. tuberculosis* identification, and liquid culture for growth and drug susceptibility testing. For TB reporting, recommended turnaround times are AFB smear within 24 hours of collection; 10-14 days to identify *M. tuberculosis*; 15-30 days to provide drug susceptibility results; and identification of *M. tuberculosis* within 24-48 hours after NAA. CDC gathered data in 1999 through surveys and training needs

assessments to determine current practices of U.S. laboratories performing mycobacteriology testing. Of all facilities, 71.4% used fluorescence broth microscopy, 85% used rapid broth culture and 86.7% used rapid broth drug susceptibility.

A national sample of 155 laboratories showed that 35.5% conducted smear only, 46.5% conducted culture without identification, 10.3% conducted both culture and identification, and 7.7% performed drug susceptibility testing. The majority of laboratories hold cultures until a positive result is obtained. A national sample of 195 laboratories showed that specimens generally arrive to hospitals in a short period of time, but most state and referral laboratories experience delays. Data showed that AFB reporting delays negatively impact TB control. At the Second National Conference on Laboratory Aspects of TB, a recommendation was passed for laboratories to perform concentrated AFB smear as part of Level I services; AFB smear, culture and identification of all mycobacterium specimens, and susceptibility testing of *M. tuberculosis* were recommended as Level II services.

Historical data show that level of service concepts have not been followed. Proscriptive solutions are not appropriate to address changes in technology, methods and referral. Moreover, no operational research program has been developed to support referral models. Other challenges faced by laboratories are as follow. Laboratories typically use recommended rapid methods when providing test services. Many full-service laboratories cannot rapidly provide smears for treatment decisions. Mycobacteriology still requires referral and different levels of service despite new technologies that have been created. Public and private laboratories need to enhance coordination to improve referral services.

In an effort to address these problems, CDC hopes to expand the National Laboratory System beyond the current four demonstration sites. This initiative promotes closer collaboration between public and private laboratories by providing states with personnel to assess private laboratory practices. Several states have already established public/private mycobacteriology laboratory partnerships: the FastTrak system in Florida and New York; inoculation and referral of liquid cultures in California, New Mexico and Utah; and promotion of rapid methods and coordinated services in Minnesota, Washington State and Wisconsin. Some states have also developed operational research models by inoculating and immediately referring broth cultures when AFB smears are positive, splitting specimens or dividing three specimens between local and referral laboratories.

Since states are not funded to conduct these activities, consideration should be given to publishing and institutionalizing successful approaches. The importance of science-based recommendations should be evaluated to decide whether support will be provided for national assessments and operational research. To improve laboratory capacity, specific solutions should be designed for different levels of service required. Turnaround times may serve as the best measure to track progress. Regardless of solutions that are proposed, participation and endorsement by laboratories will be needed.

Dr. James Pearson outlined APhL=s perspective on laboratory capacity. The number of positive specimens submitted to PHLs has decreased due to the success of TB elimination efforts, but proficiency and expertise must still be maintained despite the decline in TB incidence. Recruiting new personnel and retaining the existing workforce are difficult due to inadequate salaries and minimal training programs for TB laboratory services. The current PHL workforce is highly skilled, but is aging. Level of service concepts continue to be an area of uncertainty for PHLs in terms of providing full services; adjusting services based on population, prevalence and specimen transport times; sustaining capacity and resources to serve as a BSL3 facility; and developing Centers of Excellence.

The consolidation of clinical laboratories and other factors influence the ability of PHLs to provide services in a timely manner. Solid communication must be maintained with clinicians, TB control programs and remote laboratories. The number of staff members must be sufficient to perform services. Issues related to transportation of specimens must be addressed, such as use of drop boxes, mail delays, ability to reach remote areas, differences in state regulations, and willingness of commercial carriers to ship specimens. Other areas are problematic for PHLs as well, including fewer full-service TB laboratories, appropriate points of contact for sensitivity testing of P&S drugs, compliance with reporting requirements by commercial laboratories, and availability of isolates for typing.

Advancements in technology have introduced a new set of challenges. PHLs must stay abreast of current science, meet customer expectations for rapid methods, develop expertise in new TB algorithms, and train staff. However, funding is still one of the most significant problems faced by PHLs due to the economic downturn that has resulted in budget cuts for TB programs. The majority of facilities and technology are outdated as well. Nevertheless, supplemental grants from CDC=s bioterrorism budget have allowed many PHLs to enhance services and strengthen infrastructure. Despite these challenges, all PHLs should provide rapid testing for *M. tuberculosis*; maintain capacity to identify significant mycobacteria; perform primary sensitivity testing; and ensure NAA and subtyping are performed when feasible.

If these services are not possible, PHLs should arrange for a high-quality, timely and accurate alternative. Responsibility for identifying the types of services PHLs can provide should be maintained at the state rather than federal level. In general, electronic reporting systems and state-based courier systems provide opportunities to improve PHL services. In particular, CDC must make strong efforts in this area because none of its four reporting systems are compatible. Funding should be allocated to develop one reporting, tracking and surveillance system that can be used by all states. This cost-effective approach would also improve reporting requirements.

**ACET** fully supported the formation of the expert workgroup and TB laboratory task force. Several suggestions were made for topics that should serve as key agenda items during the first meetings of these groups. First, sound evidence and solid studies should be referenced since many PHLs will resist the concept of consolidation. Anecdotal data that

clearly define the problem, highlight benefits and illustrate successful regionalization models should be presented as well. Second, the need for medical technology curricula and training programs to emphasize TB mycobacteriology and BSL3 facilities should be underscored to address the aging PHL workforce. CDC may play a key role in promoting this effort by providing funding.

Third, the role and perceptions of laboratories should be discussed in an honest manner. In general, laboratories are viewed as service providers rather than partners. In particular, PHLs are expected to provide prompt, efficient and effective services, but laboratorians are usually excluded from the planning process, grant discussions, policy decision-making and other programmatic activities. NTCA could take the lead in this effort by presenting successful partnerships that have been developed between laboratories and TB control programs. Consideration should be given to developing a lessons learned document. Fourth, competing priorities for bioterrorism funding allocated to states should be acknowledged, *i.e.*, laboratory infrastructure versus state security issues.

***Update on the ATS/CDC/IDSA TB Treatment Recommendations.*** Dr. Philip Hopewell prefaced his comments by emphasizing that the January 30, 2002 version of the document distributed to ACET is a confidential draft which has not yet undergone the clearance process. The statement is expected to be finalized and published by late fall/early winter 2002, but cannot be circulated or quoted at this time. Dr. Hopewell highlighted key changes in the recommendations. The fundamental responsibility and approach for successful treatment are explicitly stated. The provider or program is responsible for prescribing an appropriate regimen and ensuring that treatment is successfully completed. DOT with individualized case management is strongly recommended as the initial treatment strategy.

Drugs have been categorized as either first- or second-line and the roles of new agents have been clarified. Rifabutin may be used as a primary drug for patients on medication who experience unacceptable interactions with rifampin, but this agent has not been approved by the FDA for TB use. Rifapentine may be used as a primary drug in a once-weekly continuation phase for selected patients. Levofloxacin, Moxifloxacin and Gatifloxacin can be used as oral agents when first-line drugs are not tolerated or the organism is resistant. Streptomycin is now classified as a second-line drug due to a high incidence of resistance. An evidence-based approach was taken to rate the strength of the recommendations from A to E: Apreferred@ to Ashould never be offered.@ The quality of supporting evidence is rated from I to III: randomized trials with clinical endpoints, non-randomized clinical trials and expert opinion.

Recommendations for treating culture-positive pulmonary TB were based on general conclusions in the literature. The minimum duration of treatment is six months. Rifampin is required throughout six-month regimens, while pyrazinamide is required for the first two months. Six-month regimens are effective without INH. The minimum duration is nine months without pyrazinamide and 12 or up to 18 months without rifampin. Streptomycin

and ethambutol are approximately equal in effect. Regimens are rated and divided into HIV uninfected or HIV infected groups; two important modifications were made. The continuation phase should be extended to seven months for patients with cavitary disease and positive cultures at the completion of two months of treatment. INH/rifapentine should be administered once weekly to selected patients.

Risk factors to identify patients at increased risk of relapse are emphasized, such as sputum cultures, cavitation and microbiological criteria with culture positivity at two or three months. TB treatment in special circumstances is discussed in detail, including HIV infected patients, children, pregnant and breast-feeding women, and persons with renal, hepatic, extrapulmonary or culture-negative disease. Recommendations to manage MDR-TB are updated. Consideration is being given to adding a list of information resources to the statement.

***Smallpox Infection Control Prevention Measures.*** Ms. Rachel Stricof conveyed that small pox readiness plans for infection control and prevention measures may present an opportunity to strengthen TB infrastructure in states and localities. Smallpox is transmitted by large droplet spread of the virus from aerosolized respiratory secretions, direct contact with lesions or respiratory secretions, or exposure to airborne droplet nuclei. Airborne transmission was the cause of two smallpox outbreaks in Germany in 1961 and 1970. Radiant heating systems, strong air currents, very low relative humidity and open windows in health care facilities were found to be consistent with the distribution of cases.

CDC has distributed a smallpox readiness plan for states and localities to review, but some of the guidelines are problematic. For isolation, CDC recommends that a Type C facility be used to respond to large community outbreaks. The structure should not share air conditioning, heating or ventilation systems, should exhaust 100% of air outside and should be at least 100 yards from another occupied building. A motel, dedicated hospital and college dormitory are listed as examples of Type C facilities, but urban cities will be particularly burdened by using these buildings in a large outbreak. For decontamination, CDC recommends that reusable medical equipment be cleaned with phenolic germicides, but this guideline is inconsistent with current hospital practices.

For patient rooms, CDC recommends that paraformaldehyde be placed in water in an electric deep-fat fryer or skillet at 350 degrees for two hours. All studies show that the aerosolized smallpox virus will be fully inactivated within two days if no actions are taken. To prevent contact transmission, a mask, gloves and gown should be worn; the patient should be placed in a private room; hands should be frequently washed; and discrete equipment should be used and disinfected between patients. To prevent airborne transmission, AIIRs have shown effectiveness in reducing risks. Early identification of disease and administrative measures with demonstrated success are key to infection control.

These components include health care provider education, existing triage strategies, established early warning procedures, an appropriate system for emergency departments, properly ventilated AIRs, and personal respiratory protection. States and localities have several concerns with current bioterrorism planning efforts. CDC has established a separate infrastructure in developing guidance to prevent and control potential bioterrorism threats. Existing personnel and resources with demonstrated success in controlling biologic agents in health care environments have not been utilized. Many of CDC=s current guidelines are based on outdated health care facilities and controls.

**ACET Business.** Key outcomes and future agenda items resulting from the meeting are outlined below.

5. DTBE will draft interim guidelines on the use of the newly approved QFT assay; TST will be briefly mentioned in the article.
6. DTBE will explore venues to publish ACET=s official statement on the treatment of persons with active TB in INS custody. ACET was asked to e-mail comments on the draft document to Drs. Kawamura or Mark Lobato by February 14, 2002.
7. DTBE will begin to develop an *MMWR* article that describes recent epidemiologic TB trends in the Southeast. The TB in Southeastern States Workgroup will convene a face-to-face meeting or conference call to clarify outstanding issues that may be pursued during a separate consultation. If a decision is made to hold a follow-up meeting, DTBE will host the event. Drs. Cohn and Kawamura agreed to serve on the workgroup to add perspectives from non-southeastern states; Ms. Pozsik will provide names of additional participants; Dr. Kawamura will participate after the INS Workgroup document is approved.
8. The Low Incidence Workgroup document is currently in press and will be published as an *MMWR Reports and Recommendations*.
9. The following items will be placed on the next agenda: an update on the IOM Workgroup, a status report on the TB Federal Task Force, a progress report on the genotyping manual, an update on the binational TB card, and a presentation by the Public Health Foundation on community-based TB prevention projects.
10. Names of potential candidates to serve on the TB laboratory task force should be e-mailed to Ms. Paulette Ford-Knights.

The Chair entertained a motion to accept the previous meeting minutes; the motion was so moved and properly seconded by voting members. There being no changes or further discussion, the October 10-11, 2001 ACET meeting minutes were unanimously approved.

***Closing Session.*** ACET may convene a one-day meeting on June 6, 2002 following the World TB Congress in Washington, DC. If the special meeting is not held, the week of May 6, 2002 was proposed for the regular ACET meeting in Atlanta. The members will be polled by e-mail to confirm these dates.

There being no further discussion, Dr. Nolan adjourned the ACET meeting at 12:00 p.m. on February 7, 2002.

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I hereby certify that to the best of my knowledge, the foregoing Minutes of the proceedings are accurate and complete.

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Date

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Charles M. Nolan, M.D., ACET Chair